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ABSTRACT

This paper presents preliminary findings from a large-scale study of ability grouping in English secondary schools. Forty-five secondary schools representing three levels of grouping took part in the research. Within these schools, data have been collected from a cohort of Year 9 pupils, aged 13-14 years. All these pupils took tests in English, mathematics, and science as part of the national assessment. Test scores for these pupils at the end of Year 6 were collected retrospectively. Measures of self-concept, attitudes toward school and school work, social alienation, and truancy and exclusion from school were used to assess social and personal outcomes. The research also considers practices related to pupil grouping in school: (1) the allocation of pupils to groups; (2) the mechanisms for movement between groups; (3) classroom practices; and (4) teacher attitudes. Responses of approximately 800 teachers show that the grouping structures adopted in a school are related to teacher attitudes toward different types of ability grouping. Teachers tended to view teaching mixed ability classes as more difficult. Preliminary findings from the analysis of pupil attainment suggest that ability grouping does influence achievement, but this influence is not uniform across subjects. (Contains 26 references, 6 charts, and 5 tables.) (Author/SLD)

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Ability Grouping in Schools: An Analysis of Effects

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Ability Grouping in Schools: An Analysis of Effects

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Paper presented at the American Educational Research Association conference, Montreal, April 1999.

Abstract

This paper presents preliminary findings from a large scale study of ability grouping in English secondary schools. The aim of the research is to explore relationships between different types of ability grouping and academic, personal and social outcomes for pupils. Forty-five secondary schools representing three levels of grouping are taking part in the research. Within these schools data has been collected from a cohort of Year 9 pupils, aged 13-14 years. All these pupils took tests in English, mathematics and science as part of the national assessment of this year group during the summer term. Test scores for these pupils at the end of Year 6 were collected retrospectively. Measures of self-concept, attitudes towards school and school work, social alienation, and truancy and exclusion from school are used to assess social and personal outcomes. The research also considers practices relating to pupil grouping in school; the allocation of pupils to groups; the mechanisms for movement between groups; classroom practices and teachers' attitudes. This paper presents preliminary findings on the teachers' attitudes towards ability grouping and the effect of ability grouping on pupil attainment.

Introduction

The school system in the UK presents a particularly interesting context for research into ability grouping. Since research in the 1960s and 1970s indicated the disadvantages of rigid streaming and setting, there has been a reduction in the use of ability grouping and an increase in mixed ability organisation. In a recent survey, Benn & Chitty (1996) found that extensive streaming (tracking) for all academic subjects was rare, although some schools grouped pupils by attainment in most academic subjects. About half the schools in the survey adopted mixed ability grouping for all subjects in Year 7, but by Year 9 most had introduced setting in at least some subjects. This means that there is a variety of grouping practices in the lower school.

Although there is an extensive international literature on the effects of grouping pupils by ability, there has been very little recent research in the UK. Radical changes to the education system in this country mean that much of the earlier and overseas literature may not be directly relevant in the current situation. In particular, we now have a national curriculum together with arrangements for a national system of assessment of pupils at ages 7, 11 and 14 years. Pupils are assessed in relation to a framework of attainment targets within each subject, organised in levels corresponding to each year of schooling. The system enables pupils to perform at levels well above or below the normal level for their age group, while remaining in teaching groups based on age. It may have led to an increased amount of setting in recent years.

The evidence from previous research studies indicates that the effect of ability grouping on pupil attainment is limited. The evidence from British studies (Acland, 1973; Barker Lunn, 1970;

Fogelman, 1983; Kerckoff, 1986; Newbold, 1977) and international reviews (Kulik & Kulik, 1990; Slavin, 1987; 1990) indicate mixed findings for the effects on academic achievement. Such effects as are in evidence mainly occur through affecting opportunity to learn, through differences in the curriculum or the pacing of lessons. Where groups proceed at the same pace and cover the same curriculum there is little difference in learning outcomes (Hallam & Toutounji, 1996; Ireson & Hallam, in press).

When the non-academic outcomes of different forms of setting or streaming are considered, the picture is complex and the findings are difficult to interpret. The effects of ability grouping on pupils self concepts or self esteem are unclear. This is partly because many different measures have been used in the research. Marsh and his associates have demonstrated that general measures of self concept are only weakly correlated with academic attainment, whereas sub-scales of mathematics and verbal self concept correlate more highly with attainment in these content areas (Marsh, Parker & Barnes, 1985). In addition, the effects of ability grouping on self esteem may be mediated by the behaviour of teachers and peers and by the ethos of the school (see Hallam & Toutounji, 1996). There is some evidence that streaming can lead to anti-school attitudes and alienation among those in the low streams (Gamoran & Berends, 1987) but it may be that negative school attitudes do not result from streaming, banding or setting but that grouping procedures merely reflect social alienation. The relationship is likely to be complex. Pupils in low streams tend to be labelled as slow or difficult and these descriptions can become self-fulfilling prophecies. Research on the social climate within the classroom also indicates that peer relationships are more supportive in high ability groups, although these classes also tend to be more competitive. Low ability classes tend to be characterised by more angry, hostile interactions (Gamoran & Berends, 1987).

On a wider level, structured ability grouping can be perceived as denying educational opportunity to particular groups of pupils. There is evidence that low ability groups tend to include disproportionate numbers of pupils of low socio-economic status, ethnic minorities, boys and those born in the summer (see Hallam & Toutounji, 1996; Ireson & Hallam, in press). There are also difficulties associated with the allocation of pupils to streams or sets. Selection error is a particularly serious problem in a selective school system, where small differences in test performance may lead to substantial differences in opportunity to learn and in future employment. In a non-selective but streamed, or tracked, system the effects of selection error may be less marked but nevertheless significant. Allocation to groups appears to be based not only on prior academic achievement or ability but also on school organisational constraints (Jackson, 1964). In theory movement between groups is possible, but in practice it is restricted, because of the increasing gap in curriculum covered.

Research to date indicates that pupils in the low streams are disadvantaged in several ways. Teachers generally prefer to teach the high ability groups (Finley, 1984) and spend more time in preparation of lessons for them. High ability groups in streamed systems also tend to be taught by the more experienced and better qualified teachers. Classroom activities also differ, instruction in lower groups tends to be conceptually simplified and proceeds more slowly, topics may be omitted, there is more structured, written work with a concentration on basic skills and worksheets. There is a concern with conformity, getting along with others, working quietly, improving study habits, punctuality, co-operation and conforming to rules and expectations (Oakes, 1985). In higher ability classes there are more analytic, critical thinking tasks and discussion and pupils are given more independence, choice and responsibility.

Surveys of teachers' attitudes towards ability grouping in the USA (NEA, 1968; Wilson & Schmidts, 1978; Sweden (Husen & Boalt, 1967) England (Jackson, 1964; Barker Lunn, 1970) and Israel (Guttman et al, 1972) generally reveal positive attitudes towards teaching homogeneous classes. However, there are variations based on teachers' prior experience and the subject that they teach. In the UK in the 1970s, when mixed ability teaching was innovatory, teachers who had direct experience of it tended to hold more favourable attitudes (Newbold 1977; Reid et al, 1982). The advantages of mixed ability teaching were seen largely in social terms, while the disadvantages related to the difficulty of providing appropriate work for pupils of high and low ability in the same class.

In the UK, there is some evidence that some subjects are perceived to be more suitable for mixed ability teaching than others (Reid et al, 1982). Teachers perceive the humanities to be most suitable for mixed ability teaching, mathematics and foreign languages least suitable, with science occupying an intermediate position. The subjects considered to be suited to setting are those in which the curriculum is seen as more hierarchical, with more advanced work building directly on previous content.

Mixed ability teaching presents problems for teachers. Reports from school inspectors indicate that teachers tend to teach an 'imaginary average' pupil (Ofsted, 1995). Even teachers considered as effective in teaching mixed ability classes have problems providing instruction at appropriate levels for all the pupils, which can lead to boredom and disruption (Ofsted, 1994; 1995). Two major studies of school provision for low attaining pupils (Stradling et al 1991; Evans et al 1988) pointed to the importance of school practices and management in supporting and enabling teachers to develop effective teaching for pupils of all abilities. Both these studies argued that raising attainment is a task for the school as a whole and must involve all teachers, and both recognised the importance of curriculum development and the development of resources.

Schools in the UK have for many years been responsible for the form of grouping they adopt, albeit with advice from the local education authority. Since research during the 1960s and 1970s indicated the disadvantages of streaming and setting, there has been a move towards mixed ability grouping and a reduction in streaming. In a survey carried out in 1970, 70% of schools reported streaming in the first year (now Year 7) and only 22% used mixed ability grouping (Benn & Simon, 1970). In a recent national survey the proportion adopting streaming had dropped considerably (Benn & Chitty, 1996). The survey showed that about half the schools adopted mixed ability grouping for all subjects in Year 7, but there was increased setting and banding as pupils moved through school and in Year 9 most schools grouped by ability for some academic subjects. It is clear that a considerable variety of grouping arrangements exists in the lower secondary phase and that the most common form of ability grouping is setting, in which pupils are regrouped on the basis of their attainment in different subjects.

The introduction of the national curriculum and the associated national assessments of pupils have provided fresh reasons for schools to increase the amount of setting by attainment in particular subjects. The assessment of pupils in terms of levels facilitates grouping by attainment. The test results at the end of primary school, Year 6 (Key Stage 2), are being used by some schools to place pupils in sets during Year 7 and to assess 'value added' at Year 9 (Key Stage 3).

These changes have lead to a rekindling of interest in the ways that pupils might be grouped within schools. There is a perceived need to raise standards nationally and retain competitiveness while at the same time retaining the comprehensive system. In addition, some schools have been experiencing difficulties in relation to the behaviour and attendance of some pupils. Grouping arrangements are needed that enable pupils of all abilities to make maximum progress without increasing alienation and disaffection. As the brief review of the literature demonstrates, researchers have tended to consider single outcomes, either related to attainment or to social outcomes, such as self-esteem and attitudes towards school. There is a need for research considering the relationships between different types of outcome in schools adopting different levels of ability grouping, to inform policy and enable schools to make the maximum use of resources for the benefit of all pupils.

There are considerable methodological difficulties accompanying research comparing grouping in different schools. The categorisation of schools as adopting one form of grouping or another is difficult when different types of grouping operate in the same school simultaneously. The use of different types of measurement also creates difficulties for comparing results across studies. The evidence also suggests that outcomes within one school are not consistent over time, across subject domains or between teachers. There appear to be complex interactions between grouping, teaching methods, teacher attitudes and the ethos of the school.

The current research project, which is funded by the Economic and Social Research Council, aims to take account of the problems in previous studies and develop an explanatory model which will further our understanding of the complex relationships between different kinds of pupil grouping, educational outcomes for pupils and the mediating processes operating at school, class and teacher level. It aims to provide information about school practices in relation to ability grouping, including the procedures for allocating pupils to groups and moving pupils between groups, the allocation of resources to groups, teachers attitudes towards grouping and teacher self reports of classroom practice with different types of group.

The project as a whole is addressing the following research questions:

- What are the relationships between the academic, social and personal outcomes of education for pupils?
- How do systems of grouping pupils in secondary school affect educational outcomes (academic, social and personal) for pupils of differing prior attainment?
- What are the attitudes of teachers towards ability grouping and how do they perceive that their teaching differs between groups? To what extent are they involved in curriculum development and the production of resources in their subject?
- Are there differences between curriculum subjects in the degree of ability grouping adopted?
- What resources are allocated to different classes?
- How are pupils allocated to groups and what mechanisms exist for movement between groups?

This paper will present preliminary findings on the attitudes of teachers towards ability grouping and on the impact of ability grouping on academic attainment.

Methodology

Sample

A stratified sample of 45 schools was selected for the study, representing a range of grouping practices, intake and location. The sample comprises three levels of ability grouping in the lower secondary school (Years 7 to 9), with 15 schools in each level.

1. 'Mixed Ability Schools' (MA): with predominantly mixed ability classes for all subjects with setting in no more than two subjects in Year 9.
2. 'Mixed Ability/Set Schools' (MASET): with a gradual increase in setting, with setting in no more than two subjects in Year 7.
3. 'Set Schools' (SET) with streaming, banding or setting in most academic courses from Year 7.

All schools had received satisfactory inspection reports during the three years before the start of the project. The three groups of schools were balanced with respect to intake, using free school meals as an indicator. The mean percentages and standard deviations of eligibility for free school meals are for the Mixed Ability Schools, Mean = 16.3, s.d. = 14.95; for the Mixed ability/set schools, Mean = 13.2, s.d.= 13.99; for the Set Schools, Mean = 14.1, s.d. = 12.73. These figures indicate that the intake of pupils to the Mixed Ability schools is somewhat more socially deprived than the intake to the Set Schools, but that the distributions overlap to a large extent.

In addition, very large and very small schools were excluded from the sample and the three groups of schools were balanced in terms of size. Mean numbers of pupils on roll were 969.1 (s.d. = 212.24), 993.7 (s.d. = 212.56) and 867.7 (s.d. = 181.16), with the set schools on average slightly smaller than the other two groups, but again with good overlap of the three distributions.

Data Collection

Within the schools, the cohort of Year 9 pupils was included in the sample. Data was collected from all teachers of lower school classes of English, mathematics and science and all heads of department. Information has also been collected through interviews with the head teacher and with those responsible for the allocation of pupils to groups. The data collected at each level is as follows.

Pupil data: For all Year 9 pupils in each school, attainment data has been collected from performance in national tests at age 7 years (Key Stage 2 SATs) and at age 14 years (Key Stage 3 SATs). Pupils have also completed a questionnaire including scales measuring self concept, attitudes towards school in general, their views about ability grouping, their attitudes towards English, maths and science and their perceptions of teaching in these subjects, their plans for future education and an indicator of parental interest in education. Data on ethnic origin attendance and exclusions from school has also been collected from school records.

School data: Schools have been selected on the basis of their grouping practices. Further information has been gathered concerning the processes and criteria used in the allocation of pupils to groups, the extent of and procedures for movement between groups and the allocation of resources to groups. These data have been collected by questionnaires and by face-to-face interviews with members of staff with responsibility for the allocation to groups in each school.

Teacher data: Information on teachers' attitudes towards ability grouping, their perceptions of the main problems of teaching the different groups and their classroom practice has been gathered through questionnaires.

Results

1. Teachers' attitudes towards ability grouping: preliminary findings

All heads of department and all English, maths and science teachers of year 7, 8 and 9 pupils and a sample of lower school teachers of other subjects were asked to complete questionnaires. The questionnaire contained items on teachers' attitudes towards ability grouping, the extent to which they grouped pupils by ability within classes, and their perceptions of the main problems of teaching the different groups.

The findings reported here are preliminary findings relating to teachers' attitudes towards aspects of grouping. The data from 7 schools of each type are included in the analysis. This includes teachers in schools working predominantly with mixed ability tuition in years 7 to 9, teachers in schools adopting a mixture of setting and mixed ability teaching and teachers in schools operating mainly setted ability grouping structures. The analysis focuses on 29 questions relating to teachers' attitudes towards mixed ability and setted teaching. The teachers were asked to rate a series of statements on aspects of grouping on a 5 point rating scale indicating the extent to which they agreed or disagreed with them. They also responded to questions asking which subjects they considered most suitable for mixed ability teaching.

The findings presented include frequency counts of the number of responses made at each level to each statement and comparisons between responses from teachers in schools adopting different grouping practices.

In describing the analysis the questions are grouped into categories. Some questions could have been included in more than one category. Chi-squared statistical tests were undertaken to give an indication of the extent to which differences in responses between teachers from schools adopting different practices might generalise to a larger population. Where there were statistically significant differences between teachers in schools adopting different grouping practices, the details of the chi-squared test are given.

Perceptions of the effects of different types of ability grouping on the academic progress of pupils perceived as able

A number of statements addressed the issue of whether more able children benefit from different kinds of grouping procedures. Table 1 provides details of the statements and gives the overall frequency counts for all of the teachers in response to those statements. Charts 1a, 1b and 1c illustrate that teachers tend to believe that there are benefits to the academic progress of the more able pupil when setted grouping procedures are adopted. There is less agreement that able pupils are held back in mixed ability classes. Over half of the respondents indicated that setting prevents bright children being inhibited by negative peer pressure.

Chart 1a Bright children are neglected or held back in mixed ability classes

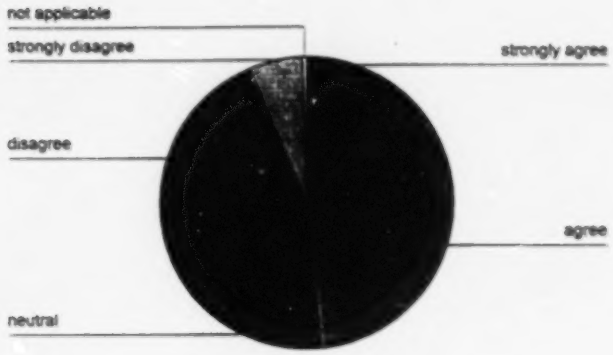


Chart 1b Setting ensures that brighter children make maximum progress

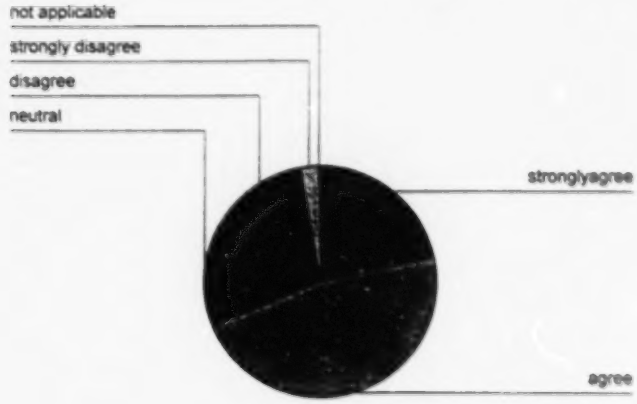
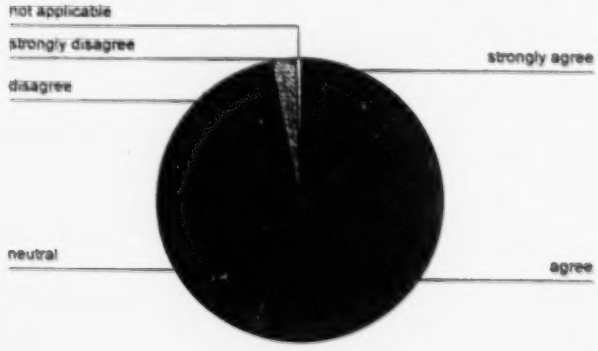


Chart 1c Setting prevents brighter children being inhibited by negative peer pressure



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Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Bright children are neglected or held back in mixed ability classes	98	318	156	237	50	****
Setting ensures that brighter children make maximum progress	188	405	144	104	21	****
Setting prevents brighter children being inhibited by negative peer pressure	115	364	194	162	25	**

Table 1.Frequency counts of statements related to the academic performance of able pupils
Chi-squared tests comparing the difference in response between teachers in the three groups of school.
****p<.00001, **p<.01

There were also significant differences in the responses to these statements from teachers in schools adopting different kinds of ability grouping procedures. Figures 1d and1e illustrate these differences. Teachers working in schools adopting mixed ability practices tend to view mixed ability teaching as less likely to inhibit the progress of the more able. Similar differences in response are also evident in relation to the inhibiting effects of negative attitudes from peers but they are less strong.

Perceptions of the effects of different types of ability grouping on personal and social factors

Table 2 gives the frequencies of the responses made in relation to statements relating to self-esteem, stigmatisation, children's perceptions of their own ability, social adjustment and motivation. There is general agreement that setting has a damaging effect on the self-esteem of those in the lower sets and also that grouping practices affect self esteem (see chart 2a). Chart 2b illustrates the extent to which setting is also viewed as stigmatising the less able. There is less consistency in the responses to the statements regarding the pupils' own perceptions of their abilities in mixed ability classes with opinion being relatively evenly divided. However, there is agreement that social adjustment is better for both low ability and all children in mixed ability structures. Where motivation is concerned opinion is divided with no clear picture emerging.

The responses to most of these statements can also be differentiated by the kind of ability grouping structures operating in the school where the teacher works. Those working in schools where there are mixed ability grouping procedures tend to view setting in a more negative light in relation to the social outcomes of education, particularly those relating to self-esteem and social adjustment.

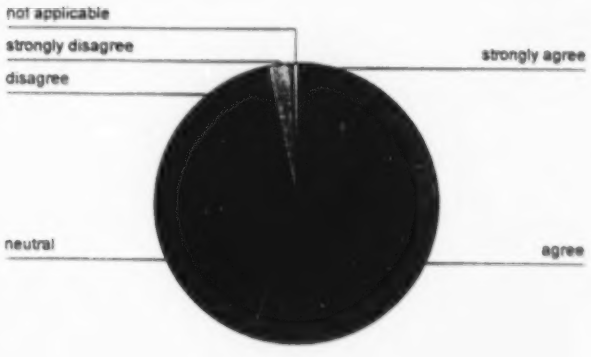
Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Pupil self-esteem is unaffected by ability grouping	12	105	196	409	138	
Setting has a damaging effect on the self-esteem of those in lower sets	100	325	168	232	35	**
Setting children stigmatises those perceived as less able	134	353	133	194	44	****
In mixed ability classes the less able pupils are more aware of what they are unable to do. They are aware that other pupils are doing different work	63	341	154	251	53	**
Less able children compare themselves unfavourably to more able children in mixed ability classes	34	362	210	231	21	***
Mixed ability grouping leads to better social adjustment for the less able pupils	75	403	227	131	22	
Mixed ability grouping leads to better social adjustment of all pupils	89	356	252	143	13	***
Overall motivation is higher when pupils are in mixed ability classes	37	192	289	278	64	****
Knowing they are in a low set leads to pupils 'giving up'	68	289	144	310	48	

Table 2.Frequency counts of responses to statements regarding the perceived personal and social effects of different kinds of ability grouping
Chi-squared tests comparing the difference in response between teachers in the three groups of school. ****p<.00001, ***p<.001, **p<.01

Chart 2a Setting has a damaging effect on the self-esteem of those in the lower sets

Chart 2b Setting children stigmatises those perceived as less able

Chart 2c Mixed ability grouping leads to better social adjustment for the less able pupils



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Perceptions of the effects of different kinds of ability groupings on discipline and disaffection from school

Table 3 displays the frequency counts of responses to statements about the effects of different kinds of ability grouping on discipline and disaffection from school. There was general agreement that there are more discipline problems in the lower ability classes when setting procedures are adopted. In contrast there was a tendency to disagree with the statement that there are more discipline problems in mixed ability classes. Those working in mixed ability schools tended to disagree more strongly. Opinion was divided over the effects of different grouping practices on truancy although there was a tendency to agree that there are more exclusions from school in the lower sets when setting procedures are adopted.

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
In general there are more discipline problems in mixed ability classes	55	222	187	272	111	***
Where classes are set there are more discipline problems in the lower ability classes	180	358	137	147	34	
Where classes are set there is more truancy from pupils in the lower sets	32	198	339	212	48	
Where classes are set there are more exclusions of pupils fin the lower sets	36	239	363	153	25	

Table 3. Frequency counts of responses to statements related to the effects of different kinds of ability groupings on discipline and disaffection
Chi-squared tests comparing the difference in response between teachers in the three groups of school. ****p<.00001, **p<.01

Perceptions of the effects of different kinds of ability groupings on teaching and teachers

The detailed frequency counts related to perceptions of the effects of different kinds of ability grouping on teaching and teachers are given in table 4. There is no consensus that setting leads to teachers ignoring the fact that a class always contains a range of abilities. Responses to this statement tend to reflect the ability grouping procedures adopted in the school where the teacher is working, with teachers in setted schools disagreeing more strongly than teachers in mixed ability schools. There is also no consensus that only very good teachers can teach mixed ability classes successfully. The response is mixed. In contrast there is strong agreement that teaching is easier for the teacher when classes are set. This response reflects the views of the whole sample regardless of type of ability grouping adopted in the school. There is general agreement that in mixed ability classes teachers tend to teach to the average child and strong agreement that setting makes classroom management easier. This view is held even more strongly by those who teach in setted or part setted schools. There is overall disagreement with the statement that 'soft' teachers fare better with the more able pupils and strong agreement that developing the appropriate teaching skills necessary to teach a mixed ability class benefits all pupils.

When asked about the curriculum, strong views are expressed that setting enables pupils' curriculum needs to be better matched, although this is supported more by those teaching in setted schools. There is also very strong agreement that teaching the lower sets requires a different teaching approach to teaching the higher sets. The response was particularly marked for those teaching in schools where setted ability grouping structures are adopted.

Statements	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	
Setting leads to teachers ignoring the fact that a class always contains a range of abilities	38	262	138	319	101	****
Only very good teachers can teach mixed ability classes successfully	82	268	206	241	59	
Teaching is easier for the teacher when classes are set	103	394	166	172	28	
In mixed ability classes teachers tend to teach to the average child	25	421	141	241	33	
Setting makes classroom management easier	78	464	149	147	19	***
'Soft' teachers fare better with the more able pupils	39	194	245	251	111	
Developing the appropriate teaching skills necessary to teach a mixed ability class benefits all pupils	234	446	122	48	11	****
Setting enables pupils' curriculum needs to be better matched	178	418	134	111	21	****
Teaching the lower sets requires a different approach to teaching the higher sets	352	431	37	32	8	**

Table 4. Frequency counts of responses to statements related to the effects of different kinds of ability groupings on teaching and teachers
Chi-squared tests comparing the difference in response between teachers in the three groups of school. ****p<.00001, ***p<.001, **p<.01

Subject domains considered appropriate for mixed ability reaching

Teachers were asked 'Which of the following subjects do you think are suitable for teaching in mixed ability classes in years 7, 8 and 9?' Responses in relation to English, maths, science, modern foreign languages and humanities are given in figure 1The subjects considered as most suitable for mixed ability teaching were English and humanities. Those considered most unsuitable were maths and modern foreign languages. However, there was a tendency for those teachers working in schools where mixed ability teaching was the grouping structure in operation to support mixed ability teaching more than those in setted schools.

2. The effect of ability grouping on academic attainment: preliminary findings

Data from 21 schools (seven of each level of grouping) has so far been entered in to this analysis. The measures of interest are the Key Stage 2 and Key Stage 3 Test levels. The Key Stage 2 tests were taken by the cohort of Year 9 pupils when in Year 6, the final year of primary school. These data were collected from the secondary schools where possible. Some schools reported they did not have the data and the researchers then contacted the pupils' primary schools to ascertain whether they had records. Many of the primary schools were able to supply this information. In the 21 schools, we have both Key Stage 2 and 3 results for 1946 pupils in English, 1986 in mathematics and 1978 in science. The distribution of the data missing for the three groups of schools indicates that there is an even balance. These data sets form the basis for the first set of analyses.

At each Key Stage, the results for English, mathematics and science are recorded as levels. The distributions for each of these sets of scores approximated normal distributions. Table 5 displays the means and standard deviations for the levels attained in each subject at Key Stages 2 and 3.

	English (N=1946)		Mathematics (N=1986)		Science (N=1978)	
	KS2	KS3	KS2	KS3	KS2	KS3
MA	3.63 (.69)	5.10 (.94)	3.60 (.82)	5.15 (1.22)	3.99 (.71)	5.01 (1.06)
MASET	3.58 (.74)	5.20 (.95)	3.45 (.81)	5.12 (1.19)	3.79 (.76)	4.86 (1.01)
SET	3.66 (.69)	5.21 (1.05)	3.60 (.88)	5.18 (1.33)	4.13 (.78)	4.98(1.14)

Table 5. Means and standard deviations (in brackets) for the levels attained in each subject at Key Stage 2 (Year 6) and Key Stage 3 (Year 9) by school type.

The means for the MASET schools are slightly lower in each subject in Key Stage 2 (Year 6). At Key Stage 3 there is no consistent pattern across all three subjects. Analysis of covariance with Key Stage 2 levels entered as a covariate was computed for each subject in turn. This showed significant differences between the three types of school, with different patterns in the three subjects. Each of these will be taken in turn.

For English, the effect of school type on KS3 levels was highly significant [$F(2,1942)=4.82$, $p<.01$] with significant contrasts between the set schools and the other two types. In mathematics, there was a less significant effect of school type[$F(2, 1982)=4.38$, $p<.05$], but again both contrasts were significant. In science, there was again a highly significant effect of school type [$F(2,1974)=8.59$, $p<.001$], but in this subject pupils in the MA schools performed best in the KS3 tests, when performance at KS2 was accounted for.

The analysis therefore suggests that the impact of ability grouping may vary according to curriculum subject. No firm conclusions can be drawn, however, until the full data set is analysed using more sophisticated modelling techniques. A particular note of caution is that this analysis has not yet included ethnic origin which may be a significant factor, influencing performance in English in particular. There were some schools with high proportions of pupils from ethnic minorities in the sample.

The next step in the analysis was to look again at the distribution of scores for evidence that schools in the SET group were extending more able pupils. Previous research has indicated that setting tends to lead to a greater range of attainments, allowing the more able to achieve higher marks while the lower attaining pupils are left behind. If this were the case, we would expect to see higher proportions of pupils attaining the highest levels in the Key Stage 3 tests. In fact, there is little evidence that this is happening in any of the three subjects.

Discussion

These findings must be viewed with some caution, given that they are based on just under half the sample. They do tend, however, to support some of the findings from previous research and suggest some differences that will be of interest if they are confirmed in the analysis of the full sample.

The findings from the survey of teachers' views tends to support many of the findings from earlier research. In addition, they demonstrate that the grouping structures adopted within a school are related to the teachers' attitudes towards different kinds of pupil grouping. Whether this means that teachers are influenced by their environment or whether they seek to work in an environment that is conducive to their philosophy of education cannot be established from the current analysis.

In general, the majority of teachers seem to believe that:

- setting benefits the more able child, ensuring that they make maximum progress and preventing inhibition from peer pressure;
- setting has a damaging effect on the self-esteem of those in lower sets and stigmatises those perceived to be less able;

- mixed ability grouping leads to better social adjustment for all pupils and particularly for the less able pupils;
- setting makes teaching and classroom management easier, but there are more discipline problems in the lower sets;
- teaching the lower sets requires a different approach to teaching the higher sets;
- humanities and English are more suitable for teaching in mixed ability classes than mathematics and modern foreign languages.

There was much less consensus in relation to the other statements in the questionnaire. These findings add to earlier research by providing evidence that teachers' views of ability grouping are related to the practices adopted in their place of work.

The findings from the analysis of the pupil attainment data must be treated with great caution as only a preliminary exploration has been carried out. Other variables have yet to be added and analysed in a multi-level model. These include ethnic origin and an indicator of social deprivation (free school meals). The analysis undertaken to date of the attainments of the pupils in English, mathematics and science suggests that ability grouping does influence pupil attainments, but that the influence is not uniform across subjects. Given that teachers generally thought that English was suitable for mixed ability teaching, the finding that pupils' attainments are higher in the set schools is somewhat surprising. This might be explained by differences in the numbers of pupils of non-British origin, many of whom would not speak English as their first language. Until the full analysis is complete, however, we can only speculate.

Given the tendency for teachers to view teaching with mixed ability classes as more difficult, it would be expected that pupils in setted systems would perform better. If they do not, then the major question will be why not? The answer to this question is likely to be complex, and several factors will need to be explored, such as the attitudes of the pupils and teachers in the different types of school, the motivational orientation of pupils and the ethos of the school.

References

Acland, H. (1973) Streaming in English primary schools *British Journal of Educational Psychology, 43 (2),* 151-159.

Barker Lunn, J. C. (1970) *Streaming in the Primary School* Slough: NFER.

Benn, C. & Chitty, C. (1996) *Thirty Year On: Is Comprehensive Education Alive and Well or Struggling to Survive?* London: David Fulton.

Benn, C. & Simon, B. (1970) *Half Way There: Report on the British Comprehensive School Reform* London: McGraw-Hill

Creemers, B. P. M. (1994) *The Effective Classroom,* London: Cassell.

Evans, P., Ireson, J., Redmond, P. & Wedell, K. (1988) *Curriculum research for pupils with moderate learning difficulties.* Final report to the Department for Education and Science.

Finley, M. K. (1984) Teachers and tracking in a comprehensive school *Sociology of Education, 57,* 233-243.

Fogelman, K. (1983) Ability grouping in the secondary school, In Fogelman, K. (Ed.) *Growing Up in Great Britain, Papers from the National Child Development Study.* Macmillan for NCB.

Gamoran, A. & Berends, M. (1987) The effects of stratification in secondary school: synthesis of survey and ethnographic research. *Review of educational research,* 57, 415-435.

Gregory, R. P. (1984) Streaming, setting and mixed ability grouping in primary and secondary school: some research findings. *Review of educational research, 57,* 415-435.

Hallam, S. & Toutounji, I. (1996) *What do we know about the grouping of pupils by ability?* London: Institute of Education.

Ireson, J. & Hallam, S. (in press) Raising standards: is ability grouping the answer? *Oxford review of education.*

Kerkoff, A. (1986) Effects of ability grouping in British secondary schools. *American sociological review,* 51, 842-858.

Kulik, C-L. C. & Kulik, J. A. (1982) Effects of ability grouping on secondary school students: a meta-analysis of evaluation findings *American educational research journal, 19,* 415-428.

Kulik, J. A. & Kulik, C-L. C. (1992) Meta-analytic findings on grouping programs, *Gifted child quarterly, 36(2),* 73-77.

Marsh, H. W., Parker, J. & Barnes, J. (1985) Multidimensional adolescent self concepts: their relationship to age, sex and academic measures. *American educational research journal, 22,* 422-444.

Newbold, D. (1977) *Ability Grouping: The Banbury Enquiry.* Slough: NFER Publishing Company.

Oakes, J. (1985) *Keeping track: How schools structure inequality.* New Haven: Yale University Press.

Oakes, J., Gamoran, A. & Page, R. (1991) Curriculum differentiation: opportunities, consequences and meanings. In P. Jackson, (Ed) *Handbook of Research on Curriculum.* New York: Macmillan.

OFSTED (1995) *Annual report of Her Majesty's Chief Inspector of Schools, 1993/94: Part 1, Standards and Quality in Education,* London: OFSTED

Reid, M. E., Clunies-Ross, L. R., Goacher, B. & Vile, D. (1982) *Mixed Ability Teaching: Problems and Possibilities.* Windsor: NFER-Nelson.

Reynolds, D., Sullivan, M. & Murgatroyd, S. (1987) *The comprehensive experiment: A comparison of the selective and non-selective system of school organisation. London: Falmer Press.*

Sammons, P., Hillman, J. & Mortimore, P. (1996) *Key characteristics of effective schools: a review of school effectiveness research,* London: Office for Standards in Education.

Slavin, R. E. (1987) Ability grouping and student achievement in elementary schools: a best evidence synthesis *Review of educational research, 57(3),* 293-336.

Slavin, R. E. (1990) Achievement effects of ability grouping in secondary schools: a best evidence synthesis *Review of educational research, 60,* 471-490.

Stradling, R., Saunders, L. & Weston, P. (1991) *Differentiation in Action* Slough: NFER.

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